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ABSTRACT

This experiment investigated two problems: Can attitudes be affected as a result of simulation games in a classroom setting? Can these attitudinal changes, or lack thereof, be statistically assessed. The two purposes of the study were: (1) Exposure and involvement of under-graduate education students to basic options and decisions presented to inner-city ghetto residents; and, (2) Utilization of research data as a guide line for recommendations affecting pre-service and in-service curriculums offered by the College of Education. The experimental and control groups were randomly selected from three classes of undergraduate education majors enrolled in Human Growth and Development at Florida Technological University. Both the experimental and control groups comprised 20 students. The experimental group was involved in the "Ghetto Game." The control group was given lectures on socio-economic variables as determinants of basic life styles. Following the post-game discussion the experimental group was given the semantic differential. The control group received the semantic differential following their lectures. The subjects were provided with a concept to be differentiated and a set of bipolar adjective scales against which to do it. The subject indicated for each item the direction of his association and its intensity on a seven-step scale. (Author/JM)

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AN ASSESSMENT OF THE EFFECTS OF A SIMULATION GAME ON INDIVIDUAL'S ATTITUDES TOWARD INNER-CITY LOW SOCIO-ECONOMIC LIFE STYLES

A Practicum

Presented to

Nova University

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

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by

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CHAPTER I

INTRODUCTION

Statement of the Problem

1. Can attitudes be affected as a result of simulation games in a classroom setting?
2. Can these attitudinal changes, or lack thereof, be statistically assessed?

Hypothesis

There will be no significant differences in the mean attitude scores toward various concepts as measured by the semantic differential between an experimental group which has participated in the GHETTO game and a controlled group which has not.

Background and Significance of the Study

For the past decade, simulation games have flooded the educational market, and in all too many cases very little if any field testing has occurred before market availability. (Twelker, 1972) The simulation game GHETTO, under investigation in this study, seems to potentially offer a positive learning experience for students lacking exposure to/and understanding of basic life-styles exemplified in inner-city ghetto settings.

Flynn (1971) found simulation games, depicting inner-city life styles, to be valuable teaching tools when preparing student teachers

for inner-city teaching internships.

The faculty of the College of Education must expose and prepare future teachers for a wide variety of teaching situations in Public Schools, which are exactly that--PUBLIC! Teachers must deal with students that have life values, expectations, ambitions, and experiences different from those of her/his own. Perception, understanding, and concern seem to be the three vital steps to communication, and communication is the "jist" of affective and effective teaching!

This study has a two-fold target:

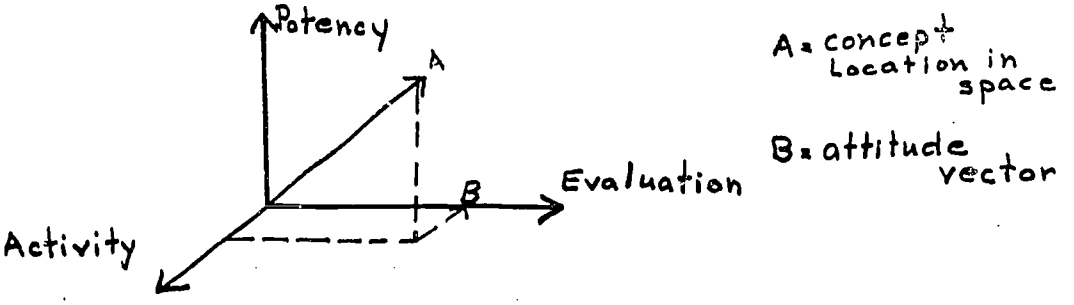
1. Exposure and involvement of under-graduate education students to basic options and decisions presented to inner-city ghetto residents.

2. Utilization of research data as a guide line for recommendations affecting pre-service and in-service curriculums offered by the College of Education.

Definition of Terms

1. Semantic Differential: A combination of controlled association and scaling procedures by which an individual or group's reaction to some concept can be measured on three or more dimensions. Osgood, (1957) found three distinct dimensions evaluation, potency, and activity; with regard to its application to attitude measurement, it is feasible to identify attitude as one of the major dimensions of meaning in general.

2. Semantic Space: Semantic space is a region of some unknown dimensionality and Euclidian in Character. (Osgood, 1957)



3. Semantic Scale: Each semantic scale is a pair of bipolar adjectives on a seven point scale in a straight line function. (Osgood, 1957)

4. Attitude: Attitude is a readiness to react toward or against some situation, person, or thing, in a particular manner, or social phenomenon. (Good, 1959) An attitude toward a concept is defined as the projection of this point onto the evaluative dimension (Osgood, 1957).

5. Ghetto: A simulation game designed for junior high to college age students; to give the players a vicarious experience of some of the pressures that influence the lives of urban poor. It attempts to deal with economic and family responsibilities, slum schools, and the rewards and risks of illegal activities.

6. Simulation: Simulation is an experience capable of including both process and social interaction variables related directly to human factors. (Waller, 1971)

7. Hustling: Hustling is defined as any illegal activity engaged in for profit.

8. Round: A round is representative of one year in a hypothetical person's life as determined by the game. The game is considered complete after 8-10 rounds.

9. Hour Chips: The hour chips represent the number of hours per day that an individual has available to invest in improving his living standards. The player allocates his time among the alternatives available to him. These alternatives include welfare, relaxation, recreation, education, neighborhood improvements or hustling.

10. Profile: A profile is a descriptive outline of the educational level, family responsibilities, and technical training of persons living in the ghetto.

11. Points: Players are awarded points in relation to their investment of time. These points represent a combination of financial rewards and the intrinsic satisfaction of the activity.

Limitations of the Study

1. This study is limited to pre-service teacher trainees at Florida Technological University.

2. The semantic differential will be the only procedure used to gather data.

3. The population size will be limited to the use of students from three classes at Florida Technological University.

Basic Assumptions

1. The population will be representative of most education majors at Florida Technological University.

2. The students will not be biased toward this study.

3. The students will be sufficiently mature to make an honest differentiation of the scales, and understand the importance of this study.

Procedures for Collecting Data

The experimental and control groups were randomly selected from three classes (approximately 90 students) of undergraduate education majors enrolled in Human Growth and Development (EDTA 206). A Table of Random Numbers was utilized to further control chance errors and variables in the selection of the experimental and control groups, and each of the three classes were taught by the same professor.

Both the experimental and control groups were comprised of twenty students. The experimental group was involved in the Ghetto game on April 25th and May 2nd (1973). The control group was given lectures on socio-economic variables as determinance of basic life styles.

Understanding the basic aspects of the game was vital before actual student participation; therefore, the initial session with the experimental group focused on directions and basic concepts underlying the simulation game.

A post-discussion was conducted for the purpose of emphasizing the connection between the game and reality; and identifying specific strategies which had implications for the players total reward gains.

Following this discussion the experimental group was given the semantic differential. The control group received the semantic differential following their lectures on socio-economic variables.

The subjects were provided with a concept to be differentiated and a set of bipolar adjective scales against which to do it. The subject's task was to indicate for each item the direction of his association and its intensity on a seven-step scale.

Procedures for Treating Data

The mean score for each subject on each concept was computed for evaluation, activity, and potency. These means constituted the score vectors for the analysis. Since multiple and possibly dependent measures were involved, multivariate techniques were necessitated.

The experimental and control differences on the eighteen (18) measures were analyzed utilizing the program "Multivariance" at Florida Technological University Computing Center.

The program performed exact least squares analysis according to

the methods outlined by Book (1963). The equality of mean input vectors were tested utilizing Wilk's Lambda criteria to compute a mult'variate F. ratio. Univariate and step down F ratios were computed for each dependent measure. A step down F ratio for Variable P is defined as that ratio with the preceding P-1 variables treated as covariates. The concepts were appropriately ordered prior to the analyses so that the sequence would be incorporated into the original hypotheses.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

The importance of simulation techniques is fast becoming of paramount importance in all facets of educational instruction. With this premise in the minds of the authors, we wanted to ascertain through related literature the various research regarding simulation games. Also, the authors wanted to attempt to find the most effective type of attitude scales to measure simulation games. Thus, a review of literature was pursued to find a device to attempt this measurement. Our review of literature was then two-fold:

1. Reviewing literature in regards to the effective use of simulation games.

2. Reviewing literature to determine the most effective measurement device.

Simulation games have existed in many areas of our society. Coleman (1967) emphasized that simulation and games were first combined in war games and that many of the oldest parlor games such as chess and checkers were developed as war simulations long ago, and today armies use war games to develop logistic and strategic skills.

Coleman (1969) again states the positive implications for using simulation techniques in that management games were developed from war games. These were simulations of management decision-making, used in many business schools and firms to train future executives by putting

them in situations they might confront in their jobs.

Of course, to make the relevance of simulation procedures more meaningful, one must not overlook the importance of this technique in the space industry, where simulation is the basic tenet of their whole program.

Another advantage attributed to simulation by Gerlach (1967) from the Nova School in Fort Lauderdale, Florida, was that their use seemed to be more profitable for the less capable students, in that often those students made greater progress in a given skill than did the students who were more advanced at the beginning.

Coleman (1967) makes a relevant statement in that the schools have found it difficult to teach the complexities that characterizes modern society; consequently, students have had little or no experience which prepared them for the multitude of decisions and problems in adult life. The games which have been created, present the student with an approximation of certain facets of modern society that he will have to face later.

An intrinsic value of simulation games has been its attention-focusing quality. Games have tended to focus attention more effectively than most other teaching devices, partly because they involve the students actively rather than passively.

Clarke (1972) did a study that involved the simulation of the Republican National Convention in 1968, in Cedar Rapids, Iowa. An entire high school was involved in the simulation, and a ten concept semantic differential device was used to measure student attitudes concerning what they were doing in the simulation. Students who participated in

the simulated convention displayed a consistently more positive image of response to concepts than did the control group. They also displayed a very pronounced positive response in the composite of all dimensions to simulation and party convention, and in the evaluative dimensions, to almost all concepts. A larger percentage of the group involved in the simulated convention indicated an interest in actual involvement through party work in the 1968 election than did students from the control schools. Thus, simulation motivated continued real-life experience. This research, regarding an actual simulation dealing with the development of political concepts, could be applied as a model in the development of similar simulations designed to develop concepts related to poverty or other social problems.

Olson, Sullivan and Van Dyne (1971) related transfer of learning theory to the design of simulated games in education. A simulated learning experience can positively transfer to the actual task, to the extent that there is some commonality between outcomes (responses) required by the simulated and real task. It is true that most students do enjoy involvement in gaming and that this involvement in gaming enhances interaction, interest and other motivational factors. These features are only a means to reach the ultimate goal of near perfect positive transfer of learning from the classroom to the day-to-day tasks.

A research study done by Corbin (1971) indicated that simulations can be useful tools in social studies classes. The study showed that students attitudes toward specific problems in the United States are affected by participation in a simulation game.

Flynn (1971) conducted a study on the effects of a simulation game designed for preparing inner-city teachers. The results showed that this was an effective way in eliciting attitudes from prospective inner city teachers in cross-cultural understandings.

A study done by Niemeyer (1971) showed that typical college instruction alone does not have application like first-hand exposure to real problems of teaching--a simulation game in an actual classroom.

Waller (1973) purported that the use of simulation games increased academic knowledge and when used in cooperation with a curriculum, widened the gap between those subjects that use simulation games and those that do not use simulation. Simulation experiences appear to be capable of including both process and social interaction variables as related directly to human factors.

Gillin (1972) used a simulation game to determine the difference between short and long range memory achievement and students in three social studies classes. The study showed that the experimental group has longer retention of basic understandings than did the control group.

The training of teachers has been effectively done with the use of simulation. Rogers (1970) has pointed out that in training social studies teachers, simulation could be the only means available to duplicate process in a neutral context. Simulation could provide a future teacher with a realistic situation to deal with before facing the real situation.

Cruickshank (1966) has valid points to further emphasize simulation in teacher training:

1. Kersh found that students who underwent simulation training were ready to assume full responsibility during student-teaching up to three weeks earlier than a control group not having such training.

2. Vleck found that simulation increases participants' confidence in their ability to teach.

3. Weinberger reported that participants felt their behavior on the job was modified positively as a result of simulation experience.

Criticisms:

Criticisms of simulations have been reported in several studies. One done by Horton (1970) said most accounts fall on the favorable side of the ledger for simulations, but he gave three weaknesses. First, he cited the lack of control which the teacher seemed to have during a game or simulation. Secondly, he noted the problem of arranging student or subject schedules, class or subject group size, and the physical setting required for a game. A third disadvantage of simulation games that he noted was the cost in terms of the teacher's, researcher's, and sometimes the student's time.

Another criticism of simulation games was made by Gordon and Kaplan (1967). They maintained that with the noble attempt to animate the classroom and provide active, meaningful experiences, too little attention was being paid to what was being taught. They continued that when capitalizing on the student's natural desire to have fun, the educational objectives of a game should not be neglected any more than a textbook should be selected on the basis of its attractive cover and illustrations.

A strong criticism came from Kraft (1967). He disagreed with Coleman saying that simulation should not even be used in social studies because it obsecured more than it revealed.

From the many studies that have been done on simulation it seems apparent that it has been accepted by many educators, but it is still a subject to debate.

Measurement Devices:

A review of many types of measurement devices was perused and a brief description will be given of the different rating measurements in

regards to attitudes, and finally an analysis and justification for the use of the semantic differential.

Shaw (1967) discusses the Guttman scale or cumulative set of homogeneous items that are unidimensional. The scale gets its name for the cumulative relation between items and the total scores of individuals. Kerlinger (1973) states the Likert scales (summated ratings) is a set of attitude items, all of which are considered of approximately equal "attitude value", and to each of which subjects response with degrees of intensity. The scores of the items are summed to give an individual's attitude score. This places an individual on an agreement continuum of the attitude in question. Kerlinger (1973) reports on the equal-appearing interval scales (Thurstone) which are built on different principles. A set of attitude items can be used for assigning individual attitude scores, equal-appearing interval scales also, accomplish the important purpose of scaling the attitude items. Each item is assigned a scale value, and the scale value indicates the strength of attitude of an agreement response to the item.

The semantic differential, according to Gage (1967), has had rigorous and extensive experimentation; it appears to be a widely useful research instrument. Of course, it needs further experimental evaluation, research, and development as its originator emphatically states. (Osgood, Suci, and Tannenbaum, 1957).

Grady (1973) states some researchers have used the semantic differential because of its simplicity. That is, they feel the instrument has some or all of the following characteristics: It is easily administered, it is easily scored, it is stable across age groups, and it is less expensive for use in research.

In a critical appraisal, Kaufman (1959) stated that the major assets of the semantic differential included the fact that it required no verbalization on the part of the respondents.

Husek and Wittrock (1962) administered a form of the semantic differential and the simplicity of this scale was one of the reasons for its adoption.

McCallon and Brown (1971) developed a semantic differential for measuring attitudes towards mathematics. The differential consisted of one concept (mathematics) together with fifteen scales. The semantic differential proved to be an effective measure of attitude toward math.

Lowe (1972) found the use of the semantic differential was unreliable for students at the tenth or eleventh grade level as they do not differentiate between semantic factors. Worl (1971) used the semantic differential to assess the perceptions of two groups of public school elementary principals, and found the instrument highly effective. Neal and Proshel (1967) used a sixteen scale semantic differential in a study of the attitudes of disadvantaged elementary school children. They chose it because required reading and writing were minimal. They offered the observation that the evaluation dimension could be misinterpreted. That is, a positive evaluation might reflect high valuation or a strong liking, and the two things did not always go together.

Yamamato, Thomas, and Weirsma (1969) in their study of school related attitudes, used the semantic differential because of it's stability and reliability.

In summation, this review of literature investigated three separate areas: (1) simulation games, (2) attitudinal measurement, (3) semantic

differential in conjunction with simulation games. We found no studies assessing the effectiveness of the simulation game GHETTO.

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CHAPTER III

METHODS AND PROCEDURES

a. Subjects:

The authors presented the simulation game GHETTO to the experimental group on April 25, and May 2, 1973. The group was sub-divided into two groups of ten players and two identical GHETTO games were utilized. The directions for player movements were pre-taped on a cassette tape in order to standardized directions given to both groups. Since some initial confusion on the part of players was anticipated, the cassette tape allowed the authors greater freedom in resolving individual players questions. Each player received a personal profile of a ghetto dweller:

Example:	Name:	Marie
	Age:	24
	Children:	3
	Ages:	6, 4, 1
	Marital status:	single
	Educational level:	9th grade
	Source of support:	Welfare and hustling

Following the completion of ten (10) rounds, the players were matched up to discuss strategies utilized and gains accomplished! Since each player had a "double" in the other group the players readily saw variations to the particular life-choices they had made.

Following this post-game discussion the experimental group received and reacted to the concepts to be evaluated through the use of the semantic differential.

Following a lecture given on socio-economic variables as basic determiners of life styles, the control group responded to the semantic differential.

b. Semantic Differential:

The rating scales used in this study made use of the simple-looking, but highly sophisticated graphic rating scale termed the semantic differential. (Dzuiban, 1970) The rating scales, as described by Dzuiban, consist of a number of graphic "seven-unit" scales with opposing adjectives at each end. The scales define a "semantic-space" a region of unknown dimensionality and Euclidian in nature. It must be assumed that each scale represents a linear function and that it intersects the origin of the space. Accordingly, a sample of various type scales would represent a multi-dimensional semantic space. The number of accurately measurable independent dimensions sets the limit of semantic space--the differential space of meaning. (Dzuiban, 1970)

The operation of a concept differentiation can be illustrated as follows: A student is asked to judge a concept, say "poverty", against a series of scales. Assigning values from one to seven to each scale unit, there is created for each scale a quantitative value for each concept under consideration. Component analysis then would yield the component structure of the three modes which are created by use of the instrument: scales, concepts, and individuals. Osgood's (1957) original work revealed three major dimensions of meaning: evaluation, (good-bad), potency (strong-weak, and activity (fast-slow). Tuckman (1970 states that:

> "Although most of the adjectives might not seem related to the concept to be judged, this apparent lack of meaningfulness of the adjective often puts the respondent

> off his guard, and leads to more honest responses. Critics of this approach claim that the adjectives are irrelevant to the concepts to be judged, but it is this apparent irrelevance that is the strength of this approach since it often limits the tendency to produce socially acceptable responses."

c. The Logic of the Semantic Differentiation:

Osgood (1957) pointed out that there are many meanings of "meaning", and that definitions tend to correspond with the purposes of the individual doing the defining. But careful correlation of the occurrences of a term gradually will isolate its meaning from other terms and concepts. In a sense, such isolation will standardize the meaning of a concept across a culture. Although everyone perceives things a bit differently, there must be some common core of meaning in all concepts. In fact, the definition of a concept seems to make this evident. When one says, "I can't give you a definition, but I know what it means," a process of communication through shared meaning is inferred. The public school parent and the parochial school parent share the meaning of the word "school", although each has a different perception of it. Any concept, then is presumed to have a common cultural meaning, but it also has other meanings--connotative meanings which vary with the individual.

d. The Notion and Dimensionality of Semantic Space:

A hypothetical three-dimensional semantic space has been conceptualized by Kerlinger (1973) as follows:

> "Imagine the room you are sitting in. Assume that there are three sticks at right angles to each other meeting in the center of the room and touching the walls, floor, and ceiling. Label these sticks X, Y, and Z, and call them axes. Imagine there are points scattered throughout the three dimensional space with some of the points clustered near each other

> and near the X axis. If the axes have been marked off in equal intervals, any point can be uniquely defined with coordinate numbers of these respective axes."

For example, any point "p" might arbitrarily be defined as six units on X, three units on Y, and one unit on Z, so "p" would be 6, 3, 1 in three dimensional space. As previously pointed out, the actual semantic differential consists of a number of scales, each of which is a bipolar adjective paired together with concepts to be judged. The underlying nature of the scales has been determined empirically. That is, Osgood (1957) and his colleagues have found that each scale measures one dimension or component behind the scales: Evaluative, Potency, and Activity These dimensions are actually clusters of similar bipolar adjective pairs.

Through a series of component analyses then, it has been found that the above mentioned components were adequate to define the meaning of most concepts. It should be noted that other dimensions have been found and it would be possible to hypothesize larger semantic spaces. (Dzuiban, 1970)

e. Construction of the Semantic Differential from the Study:

The construction of the semantic differential device for this study consisted of selecting the concepts to be used, and the selection of the scales or bipolar adjectives against which the concepts were to be judged.

Six concepts were selected for use in the semantic differential on the basis of their relevance to the simulation that was to take place. Three colleagues who have utilized simulation as a bases for research and teaching in the field of education, Drs. Wentworth Clarke and Marcella L.

Kysilka of Florida Technological University, Orlando, Florida, and Dr. Caroline J. Gillin, of Teacher Corps, Washington, D. C. were chosen to judge the validity of the six basic concepts identified for use with semantic differential. Unanimous concensus of opinion established face validity for the six concepts presented with the semantic differential.

The rating scales were selected on the basis of their component composition and their relevance to the study. Caution was taken to provide the evaluation, potency, and activity factors. They were as follows:

Evaluation:	successful-unsuccessful	bad-good
Potency:	weak-strong	dull-sharp
Activity:	complex-simple	constrained-free

The concepts evaluated were:

1. The value of education in the ghetto is:
2. Hustling in the ghetto is:
3. Economic Potential in the ghetto is:
4. Neighborhood condition in the ghetto are:
5. Ghetto dwellers are:
6. Welfare in the ghetto is:

f. Procedure for Collection and Treatment of Data:

After both control and experimental groups had responded to the six concepts and eighteen (18) scales of the semantic differential, the authors computed the means for each student in relation to the three dimensions: evaluation, potency, and activity. Two scales for each dimension were utilized, therefore, the mean of each dimension was representative of two ratings. These eighteen (18) mean variables were then key punched on IBM

cards; one for each student. These cards were then fed into a computer (360) to determine mean, variance, F ratio and descrimination in order to test the null hypotheses.

The data were analyzed utilizing the program Multivariance, an exact least square routine according to the methods outlined by Bock (1963). The significant difference of the eighteen (18) dependent measures was tested according to the specification of single degree of freedom planned contrasts. In a two cell design those comparisons were (+1+1) for the grand mean, the constant term, and (+1-1) for the experimental control groups comparison. In this case the grand mean comparison was of no importance to the study.

The analysis procedure was based upon the general linear hypotheses:

$$Y = A\xi + \mathcal{E}$$

where Y is the matrix of cell means, A is the appropriate design matrix, ξ is the matrix of parameters to be tested and $\mathcal{E}$ is the matrix of error variates.

The multivariate F ratio was based upon Wilk's Lambda (Λ) criterion:

$$\Lambda = \frac{|W|}{|T|}$$

Where $|T|$ is the total sample sum of squares and cross products (SSCP) matrix and W is the within group SSCP matrix. It is known, however, (Rao, 1952) that for the case of two groups

$$\frac{1-\Lambda}{\Lambda} \quad \frac{N-P-1}{P} = F \begin{matrix} P \\ N-P-1 \end{matrix}$$

that is that the above function of Lambda is distributed exactly as F. (Tatsuoka, 1971). The traditional univariate F ratio were aslo computed for each of the dependent measures.

$$F = \frac{SS_b / (K-1)}{SS_w / (N-K)}$$

Step down F ratio (Roy 1958) were also computed for each dependent measure in the order which they were entered into the analysis. A step down F ratio for variable P is that value with the preceeding P-1 variables treated as covariates. Thus, the step down F for variable eighteen is an F with the effects of variables one through seventeen removed from the analysis. Pearson Product Moment correlation were also computed among the subscales of the semantic differential as well as means and standard deviations.

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CHAPTER IV

PRESENTATION OF DATA

FIGURE I. Semantic Space

The positioning of each concept in the semantic space has been plotted for the three dimensions.

In plotting the means for each dimension, a significant difference was apparent between the control and experimental groups in relation to concepts one, two, four and six.

The diversity of the means in relation to the semantic space does not appear significant for concepts three and five.

FIGURE 2.

The position of means of the evaluative dimension reveal substantial difference in the semantic differential. These means represent a difference that may be attributed to the method of teaching or due to chance.

The hypothesis was tested with a multivariate F ratio found by utilizing Wilk's Lambda. The F ratio for Multivariate test of Equality of mean vectors is equal to 2.8575 with 18 and 21 degrees of freedom. P is less than 0.0115 and the null hypothesis was rejected.

The analysis of the data according to Table I supports the rejection of the null hypothesis.

FIGURE I

Semantic space: Location of the 6 concepts for each of two groups.

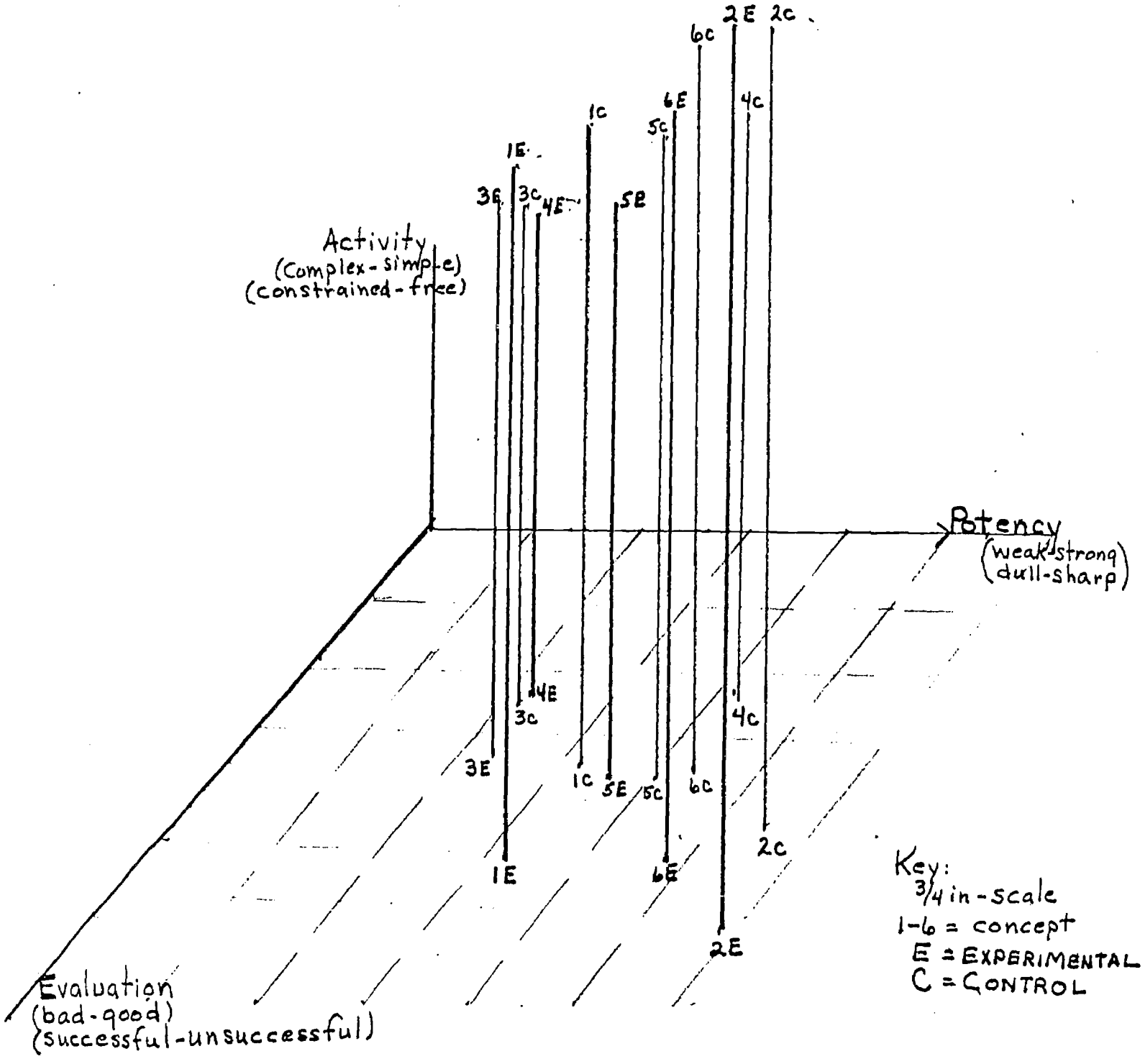

FIGURE 2

Semantic Space: Location of evaluative dimension means for each of two groups.

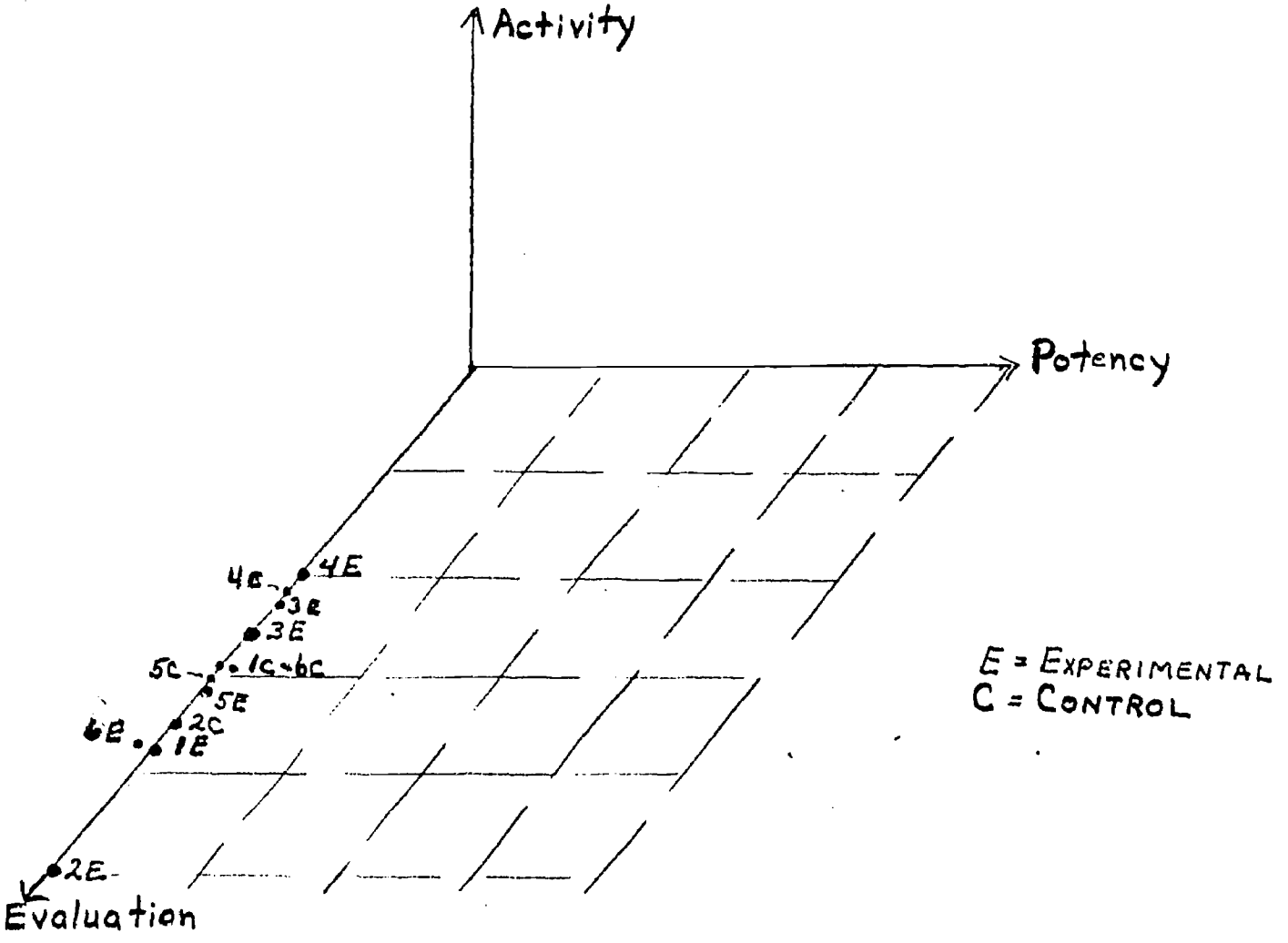

TABLE I

Multivariate Test for Equality of Means

Source	Degrees of Freedom	F ratio
among	18	2.85*
within	21	

* Significance at the .05 level

TABLE 2. Univariate Analysis

An analysis of the univariate F's shows that variable's four on the evaluation dimension for the concept of hustling exhibits salient data to support a significance at the .05 level. Further evidence of this can be found in Table 3 where the means are 5.0 and 3.7 respectively for the experimental and control groups.

Variables eleven and twelve in the potency and activity dimensions for concept four (neighborhood conditions) evidenced statistical significance at the .05 level. The computed means in Table 3 further substantiates the differences.

TABLE 3.

The table of means and standard deviation is representative of a composite of two scales in relation to the formation of a single dimension mean. A further clarification, the scales for evaluation were composed of two bipolar adjective scales: successful-unsuccessful, bad-good, dull-sharp. The two scales: complex-simple, constrained-free constituted the activity dimension.

A level of significance at the .05 level is evidenced on the P table of univariate F ratio for variables 4, 11, 12, and 16. The mean differences found between the two groups give additional support to this significant difference. Variables one (1) and sixteen (16) had identical mean scores; therefore, identical mean difference, so one might expect significance in both cases. The error variance for variable one however, was substantially larger than for variable sixteen (16).

When the influence of all preceding variables was removed (Step Down F) the identical variables (4, 11, 12, and 17 remain statistically significant at the .05 level.

TABLE 2

UNIVARIATE ANALYSIS

Concept		Semantic Differential Dimension	Univariate F	P Less Than	Step Down F	P Less Than
1.	Value of Education in the Ghetto is:	1. Evaluation	3.46	0.07	3.46	0.07
		2. Potency	0.02	0.89	2.49	0.12
		3. Activity	0.72	0.40	1.03	0.31
2.	Hustling in the Ghetto is:	4. Evaluation	9.68	0.00*	7.22	0.01*
		5. Potency	1.56	0.22	1.49	0.23
		6. Activity	0.0	1.00	1.63	0.21
3.	Economic potential in the Ghetto is:	7. Evaluation	0.51	0.48	0.32	0.58
		8. Potency	0.12	0.73	0.11	0.74
		9. Activity	0.17	0.68	0.16	0.69
4.	Neighborhood conditions in the Ghetto is:	10. Evaluation	0.63	0.43	0.08	0.31
		11. Potency	14.56	0.00*	5.84	0.02**
		12. Activity	7.18	0.01*	4.54	0.04**
5.	Ghetto dwellers are:	13. Evaluation	0.0	1.00	0.61	0.44
		14. Potency	0.94	0.33	0.20	0.66
		15. Activity	3.28	0.07	0.32	0.58
6.	Welfare in the Ghetto is:	16. Evaluation	4.28	0.04**	1.70	0.20
		17. Potency	1.35	0.25	4.29	0.05**
		18. Activity	1.33	0.26	1.86	0.19

* = indicates significance .01 level

* * = indicates significance 0.05 level

TABLE 3

POOLED GROUP MEANS AND STANDARD DEVIATIONS

Concept	Semantic Differential Dimension	Experimental $\bar{X}$	Experimental σ	Control $\bar{X}$	Control σ
1. Value of education	1. Evaluation	4.1	1.9	3.0	1.6
	2. Potency	3.2	2.0	3.2	1.5
	3. Activity	3.5	1.4	3.9	1.5
2. Hustling	4. Evaluation	5.0	1.3	3.7	1.2
	5. Potency	5.9	1.1	5.5	0.8
	6. Activity	4.7	1.4	4.7	1.1
3. Economic potential	7. Evaluation	2.6	1.3	2.3	1.3
	8. Potency	2.4	1.2	2.3	1.4
	9. Activity	3.3	1.1	3.2	1.1
4. Neighborhood conditions	10. Evaluation	2.0	1.0	2.2	1.1
	11. Potency	2.2	1.2	4.2	1.9
	12. Activity	3.0	1.2	4.0	0.9
5. Ghetto dwellers	13. Evaluation	3.1	0.8	3.1	1.1
	14. Potency	3.6	1.4	4.1	1.9
	15. Activity	3.1	1.1	3.8	1.2
6. Welfare	16. Evaluation	4.1	1.7	3.0	1.6
	17. Potency	4.9	1.3	4.4	1.3
	18. Activity	4.0	1.2	4.5	1.2

TABLE 4

CORRELATION MATRICES

Concept	Semantic Differential Dimension		Variables or Semantic Differential Dimensions: Evaluation	Potency	Activity
1. The value of education in the ghetto	1.	Evaluation	1.00		
	2.	Potency	.62	1.00	
	3.	Activity	.35	.45	1.00
2. Hustling in the Ghetto is	4.	Evaluation	1.00		
	5.	Potency	.12	1.00	
	6.	Activity	.27	- .01	1.00
3. Economic potential in the Ghetto	7.	Evaluation	1.00		
	8.	Potency	.81	1.00	
	9.	Activity	.29	.25	1.00
4. Neighborhood Conditions in the Ghetto	10.	Evaluation	1.00		
	11.	Potency	.33	1.00	
	12.	Activity	.15	.01	1.00
5. Ghetto dwellers are	13.	Evaluation	1.00		
	14.	Potency	.40	1.00	
	15.	Activity	.45	.33	1.00
6. Welfare in the Ghetto is	16.	Evaluation	1.00		
	17.	Potency	.11	1.00	
	18.	Activity	- .40	.38	1.00

The correlation matrices indicate a high correlation between the evaluation and potency dimensions on concept one (the value of education). In essence, the sum of the two groups seemed to interpret these two dimensions in similar ways and both dimensions seemed to be measuring similar attitudes.

This identical pattern of high correlation was found on concept three (economic potential). All other dimensions seemed to stand rather independent of each other and, indeed, two dimensions, potency vs. activity on concept two and evaluation vs. activity on concept six had negative correlations.

ANALYSIS OF THE DATA

According to Osgood the evaluation dimension is the strongest representation of attitude. Variables 4 and 16 are evaluation scales and both showed a significant difference between the two groups.

The experimental group gave a more positive rating to the concept Hustling. Since many of the players had assumed the role of Ghetto dwellers lacking vocational skills and having the responsibility of several children, they immediately saw that illegal activities (Hustling) offered many benefits. Risks were involved but the need to survive out-weighed this threat, so they indulged in this activity. Since it was impossible for them to draw welfare if they had a job (as it is in reality) many chose hustling as a means of making extra cash for a livlihood. The authors do not feel that the positive rating of the experimental group implies condonance of illegal activities, but instead, indicated their new understanding of why some ghetto dwellers become dope pushers, prostitutes, pimps, etc.

In relation to variable 16 (Evaluation of concept 6-welfare), the experimental group took a rather non-commital or neutral stand while the control group expressed negative attitudes toward this societal "institution". This again seems to imply growth and understanding on the part of the experimental group. The average middle-class citizen that supports welfare through his tax dollar more often than not expresses negative comments when questioned about welfare and welfare recipients

Some of the students in the experimental group began the game with these same negative feelings and tried very hard to avoid the ranks of "welfare persons", but as the game progressed and their lives were

complicated by loss of jobs, illness, additional children, or robbery, they rushed to welfare for help.

Two other significant variables were potency and activity (11 and 12) in relation to neighborhood conditions (concept four (4).

The experimental group struggled for ten (10) rounds trying to improve neighborhood conditions. Improvement can only occur through joint efforts of players and very little progress was achieved. Persons hustling realized these changes would increase their chances of getting caught by the police so they would not contribute hour chips. Another benefit would have been better educational opportunities, but here again, players (portraying persons) without a high school education showed no interest in this offering.

The mean of 2.2 on the potency dimension, and 3.0 on the activity dimension reflected the experimental groups negative feeling about neighborhood conditions. They felt the conditions were weak, dull and very constrained. These attitudes are very interesting since all persons in the experimental group were university students and very few, if any, had ever lived in an inter-city ghetto. In making an evaluation of the simulation or gaming experience, 100% of the group felt GHETTO had given them insights into ghetto life styles.

Though variable one (1) (Evaluation), the value of education, was not significant at the .05 level it did show a probability of less than .07 and is deserving of some comments at this point. Players with high school diplomas and few family responsibilities such as children, utilized education as a means of social mobility out of the ghetto. Some obtained skilled labor status through vocational technical training

and semi-professional or professional category through college education. If the players did not have a high school diploma and also had many family responsibilities, they found it most difficult to utilize the educational facilities made available. It is felt that these conditions contributed to the undecided rating given on the value of education in the ghetto. One hundred per cent of the players stated that education was not easily obtained for a ghetto dweller.

These findings indicate three or possibly five concepts presented in this simulation game did have a significant effect (one not expected by chance) upon the experimental group. If we looked at the six concepts in terms of percentages, we find a definite significance in three (50%) and significance at the .07 level for two other concepts (83.4%). Any teacher truly concerned with the effectiveness of his/her teaching techniques would find satisfaction with these chances of success.

CHAPTER 5

SUMMARY

One of the major purposes of this simulation game was to increase awareness and understanding of the life-styles of lower socio-economic ghetto dwellers.

Based upon the statistical analysis of the semantic differential and the experimental group's evaluation of the game the authors can state that the objectives were obtained. Ninty per cent of the experimental group stated that the game had altered their understanding of and attitudes toward ghetto dwellers.

This is an important factor to consider for education and non-education majors. As education majors, they represent future teachers which will face students from low-socioeconomic backgrounds. These backgrounds foster different life styles and values from those of most middle-class teachers. To effectively teach a teacher must have insight into the needs and aspirations of students.

Those students not entering the education profession will still remain voting citizens which must deal with societal issues such as: welfare, school milage, etc. Many of these students will be our judges, lawyers, doctors, environmental engineers, city councilman, school board members, etc. All of these professional positions require definite decision-making behavior. If any insights, which will facilitate understnading of other persons values, can be gained through a simulation,

these positive effects may be paramount in the future. An inclusion of a statement written by a student, Nancy Woycek, seems pertinent at this point. Miss Woycek was in the experimental group and wrote these comments:

> "During this valuable encounter, an attitude of mine was changed. When anything of any sort can alter your opinions or attitudes, especially in such a short span of time (3 hours), you know the impact must have been strong and just.
>
> I have lived outside New York City all my life, oblivious of the life in the ghetto--except perhaps just realizing that they are less fortunate than I.
>
> I thought their day would be similar to my daily routine, (waking up, going to school, coming home to play, eating dinner, doing homework, and going to bed), with the exception perhaps of their lower-class surroundings (dirty city, unclean clothes).
>
> However, this game was entirely contradictory to my feelings and impressions held. In the game, I had to pay somebody for a babysitter so I could hustle, drop out of school (if I was lucky enough to get in) to hustle, and pay more babysitters so I could spend the time I was convicted for hustling in jail.
>
> I felt this game to be influential in directing my former attitudes toward the right place. So many people in a community make themselves so unaware and unavailable to those of another color, religion, income bracket, etc. We intensify these problems more by being ignorant. But more intermingling is needed here if we are ever to understand why people in the ghettos do what they do. Without the knowledge and experience of or with the "other class", people of higher incomes will still remain in their own world just saying, "that's too bad they have to live that way." You realize, too, after the game, that you actually have to experience something in order to make judgment of any kind."

Due to the time limitations, no long term follow-up was conducted in this study. Recommendations of a follow-up to measure long term memory is suggested!

SUMMARY

by Maxine Carr

Interest in this particular simulation game has "deep-sensitive" roots within my particular teaching area, Teaching Analysis, in the College of Education. As a departmental staff, we teach two of the "Foundation" courses offered to the total university enrollment and required of all education majors. These courses are: Human Development (EDTA 206--3 hours), and Teaching Analysis (EDTA 306--5 hours). When students enroll in these courses simultaneously, they constitute eight (8) of their total fifteen (15) hour course load. I teach both of these courses and have utilized the GHETTO game with students as a technique for teaching socio-economic variables in relation to inner-city ghetto life styles. This game is constantly received enthusiastically by students but I have questioned the degree and depth of the learning taking place. This same question had been presented to me by other staff members, especially those unfamiliar with the game. Without statistical evidence to back up my own personal leaning in favor of this simulation, my opinion failed to carry enough weight to entice the "novice" to "try it--you'll like it".

Based upon statistical documentation, my enthusiastic "personal" opinion seems to have some proven truth.

This report will be presented to departmental colleagues in the form of a recommendation for the inclusion of the GHETTO game into the

Teaching Analysis (EDTA 306) Guide Book. This guide is utilized by all professors teaching this course.

Since teaching socio-economic variables is required by our department, the inclusion of GHETTO will assure the students of a two-fold experience:

1. The fun of learning in a simulated setting.
2. The realization of how socio-economic variables really effect the ghetto dweller.

SUMMARY

by Patricia Manning

Prior to this study, I was totally unfamiliar with the simulation game GHETTO. I was interested in the validity of simulation games as instructional techniques in teaching. This research that we have done for this module has reaffirmed my conviction of using simulation models and games as effective teaching tools.

I am in the area of Professional Laboratory in the College of Education. My primary responsibility is that of working with students and supervising teachers in four counties. I see daily college students who are middle class citizens, having great difficulty relating to low socio-economic groups of children.

I have long tried to bridge this chasm in different ways. But with the use of simulation games, primarily concerned with low socio-economic life styles, perhaps this can be accomplished. As we conducted our research, through reading and then actual group involvement in a simulated setting of ghetto life, I witnessed WASP's have apparent attitude change in regards to the reasons persons stay on welfare. Why the neighborhood conditions do not improve in ghetto life, and why a large percentage of ghetto dwellers are likely to remain in the ghetto. The measurement device and statistical analysis reiterated this.

It seems apparent that I will now be able to substantiate my convictions in a more valid and meaningful manner to my colleagues.

The learning that I received as a result of this study will be invaluable to me in my work. The students that I most generally work with are in the final stages of their professional preparation. I have a weekly seminar with a group of students who are doing their student teaching in the public schools. With the information that I have gleaned from this research; I will most assuredly have the students involved in the simulation game GHETTO, if they have not been exposed to it in the early days of their course work.

The simulation game GHETTO was apparently an effective vehicle for students to view ghetto life.

Again, not to belabor a point, but this was a re evant study--to say I enjoy all the horrendous number of hours that we put in seems rather trite. I can in all honesty say--of all the hundreds of hours of course work I have done as a student, this module and the whole concept of Nova is the greatest!

APPENDICES

TABLE A

SEMANTIC DIFFERENTIAL DIMENSIONS AND THEIR REPRESENTATIVE VARIABLES

Variable			Dimension
complex	-	simple	Activity
weak	-	strong	Potency
successful	-	unsuccessful	Evaluation
dull	-	sharp	Potency
bad	-	good	Evaluation
constrained	-	free	Activity

TABLE B

POOLED GROUP VARIANCE AND STANDARD

DEVIATION OF INDIVIDUAL SCALES

Variable	σ^2	σ
1.	3.34	1.83
2.	3.14	1.77
3.	2.23	1.49
4.	1.75	1.32
5.	1.02	1.01
6.	1.76	1.32
7.	1.78	1.33
8.	1.92	1.38
9.	1.32	1.15
10.	1.20	1.10
11.	2.75	1.66
12.	1.26	1.12
13.	1.09	1.04
14.	2.93	1.71
15.	1.39	1.18
16.	2.82	1.68
17.	1.85	1.36
18.	1.52	1.23

Age:_____ Sex: M F

INSTRUCTIONS

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In answering this questionnaire, please make your judgments on the basis of what these things mean to you. On each page you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

HERE IS HOW YOU ARE TO USE THESE SCALES:

If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

fair X : ____ : ____ : ____ : ____ : ____ : ____ :unfair

or

fair____ : ____ : ____ : ____ : ____ : ____ : X :unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

strong____ : X : ____ : ____ : ____ : ____ : ____ :weak

or

strong____ : ____ : ____ : ____ : ____ : X : ____ :weak

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active____ : ____ : X : ____ : ____ : ____ : ____ :passive

or

active____ : ____ : ____ : ____ : X : ____ : ____ :passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you are judging.

2

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe____: ____: ____: __X__: ____: ____:____:dangerous

IMPORTANT

1. Place your check-marks in the middle of spaces, not on the boundaries:

this not this

____: __X__: ____: ____: ____:X____: ____:

2. Be sure you check every scale for every concept -- do not omit any.

3. Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the questionnaire. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the questionnaire. Make each item a separate and independent judgement. Work at a fairly high speed. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

1. The value of education in the ghetto is:

complex	____:	____:	____:	____:	____:	____:	____:	simple
weak	____:	____:	____:	____:	____:	____:	____:	strong
successful	____:	____:	____:	____:	____:	____:	____:	unsuccessful
dull	____:	____:	____:	____:	____:	____:	____:	sharp
bad	____:	____:	____:	____:	____:	____:	____:	good
constrained	____:	____:	____:	____:	____:	____:	____:	free

2. Hustling in the ghetto is:

complex	____:	____:	____:	____:	____:	____:	____:	simple
weak	____:	____:	____:	____:	____:	____:	____:	strong
successful	____:	____:	____:	____:	____:	____:	____:	unsuccessful
dull	____:	____:	____:	____:	____:	____:	____:	sharp
bad	____:	____:	____:	____:	____:	____:	____:	good
constrained	____:	____:	____:	____:	____:	____:	____:	free

3. Economic potential in the ghetto is:

complex	____:	____:	____:	____:	____:	____:	____:	simple
weak	____:	____:	____:	____:	____:	____:	____:	strong
successful	____:	____:	____:	____:	____:	____:	____:	unsuccessful
dull	____:	____:	____:	____:	____:	____:	____:	sharp
bad	____:	____:	____:	____:	____:	____:	____:	good
constrained	____:	____:	____:	____:	____:	____:	____:	free

4. Neighborhood conditions in the ghetto are:

complex	____:	____:	____:	____:	____:	____:	____:	simple
weak	____:	____:	____:	____:	____:	____:	____:	strong
successful	____:	____:	____:	____:	____:	____:	____:	unsuccessful
dull	____:	____:	____:	____:	____:	____:	____:	sharp
bad	____:	____:	____:	____:	____:	____:	____:	good
constrained	____:	____:	____:	____:	____:	____:	____:	free

5. Ghetto dwellers are:

complex	____:	____:	____:	____:	____:	____:	____:	simple
weak	____:	____:	____:	____:	____:	____:	____:	strong
successful	____:	____:	____:	____:	____:	____:	____:	unsuccessful
dull	____:	____:	____:	____:	____:	____:	____:	sharp
bad	____:	____:	____:	____:	____:	____:	____:	good
constrained	____:	____:	____:	____:	____:	____:	____:	free

6. Welfare in the ghetto is:

complex	_____:	_____:	_____:	_____:	_____:	_____:	_____:	simple
weak	_____:	_____:	_____:	_____:	_____:	_____:	_____:	strong
successful	_____:	_____:	_____:	_____:	_____:	_____:	_____:	unsuccessful
dull	_____:	_____:	_____:	_____:	_____:	_____:	_____:	sharp
bad	_____:	_____:	_____:	_____:	_____:	_____:	_____:	good
constrained	_____:	_____:	_____:	_____:	_____:	_____:	_____:	free

TABLE D

APPENDICES

EVALUATION OF THE GAME

Now will you respond to the following by a check-mark.

1.	Is the game GHETTO relevant?	Yes 95%	No 5%
2.	Do you feel the game GHETTO gave you insights into ghetto life styles?	Yes 100%	No ____
3.	Do you feel the GHETTO game is a useful teaching tool?	Yes 100%	No ____
4.	Can hustling be used as a strategy for improving one's life?	Yes 90%	No 10%
5.	Do the features of the game realistically portray ghetto life?	Yes 95%	No 5%
6.	Does a person's family responsibility and age affect the ability to get ahead?	Yes 100%	No ____
7.	Is education easily obtained for a ghetto dweller?	Yes ____	No 100%
8.	Does education have the same rewards for a ghetto dweller as for a middle-class person?	Yes 25%	No 75%
9.	Has this experience altered any of your understandings of or attitudes toward ghetto dwellers?	Yes 90%	No 10%

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